



2019-nCoV Literature Situation Report (Lit Rep)

October 14, 2020

The scientific literature on COVID-19 is rapidly evolving and these articles were selected for review based on their relevance to Washington State decision making around COVID-19 response efforts. Included in these Lit Reps are some manuscripts that have been made available online as pre-prints but have not yet undergone peer review. Please be aware of this when reviewing articles included in the Lit Reps.

Key Takeaways

- **Transmission events from college-aged individuals to older individuals at nursing facilities resulted in two deaths, according to genomic sequence analysis of a COVID-19 outbreak following the reopening of colleges in La Crosse County, Wisconsin.** [More](#)
- **Saliva collected either via spit or swab had poor sensitivity for detection of SARS-CoV-2 by PCR in outpatients with low viral loads.** [More](#)
- **Household structure may drive intergenerational transmission of SARS-CoV-2, as suggested by a modeling of the COVID-19 epidemic in Los Angeles County from March to September 2020.** [More](#)

Transmission

- *[Preprint, not peer-reviewed]* In September 2020, La Crosse County, Wisconsin experienced a substantial COVID-19 outbreak (2,002 cases), which coincided with the return to in-person instruction at three local higher education institutions. Genomic sequencing identified rapid expansion of two SARS-CoV-2 sub-strains during this period, corresponding to two independent transmission events from college-aged individuals to older individuals at nursing facilities, which resulted in two deaths.
Richmond et al. (Oct 14, 2020). SARS-CoV-2 Sequencing Reveals Rapid Transmission from College Student Clusters Resulting in Morbidity and Deaths in Vulnerable Populations. Pre-print downloaded Oct 14 from <https://doi.org/10.1101/2020.10.12.20210294>
- The detection of SARS-CoV-2 via culture among patients with COVID-19 illness was highly unlikely beyond 10 days of symptom onset in patients with mild-to-moderate disease. In a systematic review of 15 studies with more than 800 patients (5 studies did not specify sample size), the authors estimate that only six out of 217 patients had culturable virus beyond 10 days. For patients who were immunocompromised or with severe-to-critical COVID-19 illness, SARS-CoV-2 could be isolated for up to 32 days following onset of symptoms.
Walsh et al. (Oct 9, 2020). The Duration of Infectiousness of Individuals Infected with SARS-CoV-2. The Journal of Infection. <https://doi.org/10.1016/j.jinf.2020.10.009>

Testing and Treatment

- *[Preprint, not peer-reviewed]* Saliva collection devices showed poor sensitivities for detecting SARS-CoV-2 RNA in Belgian outpatients. Saliva samples collected either by spitting into a commercial preservative (Norgen Biotek) or swabbing (DNA Genotek) had sensitivities of 31% and 22% when



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compared to individuals who were PCR-positive on nasopharyngeal swabs (N=107) from outpatient triage centers in Belgium. The sensitivity was improved when the cohort was restricted to samples with medium to high viral loads (97% and 77%, respectively).

Mestdagh et al. (Oct 13, 2020). Evaluation of Saliva Sampling Procedures for SARS-CoV-2 Diagnostics Reveals Differential Sensitivity and Association with Viral Load. Pre-print downloaded Oct 14 from <https://doi.org/10.1101/2020.10.06.20207902>

- The International Antiviral Society-USA panel released recommendations regarding antiretroviral therapy for both the treatment and prevention of HIV. These guidelines involve recommendations regarding when to start antiretroviral therapy, when to change regimens, and recommendations for specific subpopulations (e.g., elderly patients, patients with organ dysfunction). Highlights of changes from previous versions include new recommendations for initial therapy (DTG/BIC + TAF/FTC or TDF/FTC) and include a two drug option for the first time (DTG/3TC) in select subpopulations.

Saag et al. (Oct 14, 2020). Antiretroviral Drugs for Treatment and Prevention of HIV Infection in Adults. JAMA. <https://doi.org/10.1001/jama.2020.17025>

- In a healthcare setting in China where two negative PCR tests for SARS-Cov-2 were required for hospital discharge, 37% of pediatric patients (n=14) had positive PCR tests upon subsequent PCR testing ("re-detectable positivity"). Family cluster infection, higher white blood cell count, and longer plasma prothrombin time were identified as risk factors for re-detectable positivity. In patients who experienced re-detectable PCR, positive PCR testing was more frequently identified in stool samples as compared to nasopharyngeal swabs.

Peng et al. (Oct 13, 2020). Risk Factors for Re-Detectable Positivity in Recovered COVID-19 Children. Pediatric Pulmonology. <https://doi.org/10.1002/ppul.25116>

Clinical Characteristics and Health Care Setting

- Nationwide implementation of COVID-19 mitigation measures in the Netherlands on March 9, 2020 was associated with significant reductions in the incidence of preterm births in the following months compared to the corresponding time window immediately prior to mitigation measures (RR=0.77 to 0.85, depending on the length of the time window on either side of March 9). Reductions were consistent across gestational age strata and robust in sensitivity analyses.

Been et al. (Oct 13, 2020). Impact of COVID-19 Mitigation Measures on the Incidence of Preterm Birth: A National Quasi-Experimental Study. The Lancet Public Health. [https://doi.org/10.1016/S2468-2667\(20\)30223-1](https://doi.org/10.1016/S2468-2667(20)30223-1)

Modeling and Prediction

- *[Preprint, not peer-reviewed]* Household structure may play a role in the persistent propagation of COVID-19 epidemic, as suggested by a modeling study describing three phases of the COVID-19 epidemic in Los Angeles County. The model showed that during phase I (March 1-April 4), initial seeding of infection in relatively affluent areas was followed by radial geographic extension to adjoining communities. During Phase II (April 5- July 11), COVID-19 cases continued to rise and concentrated in four geographic foci, reflecting changes in social mobility indicated by smartphone tracking data. The prevalence of households at high risk for intergenerational transmission was strongly correlated with the persistence of continued COVID-19 propagation. During Phase III (July-12-September 19), the geographic concentration was enhanced and the incidence remained as high as the incidence seen at the end of Phase I.

Harris et al. (Oct 14, 2020). *Understanding the Los Angeles County Coronavirus Epidemic The Critical Role of Intrahousehold Transmission*. Pre-print downloaded Oct 14 from <https://doi.org/10.1101/2020.10.11.20211045>

Public Health Policy and Practice

- [Preprint, not peer-reviewed] A simple technique of sampling condensate from a commercial dehumidifier at 24-48 hour intervals identified SARS-CoV2 in a hospital setting. Four portable dehumidifiers obtained from Amazon were stationed at various locations in a Maryland hospital ward over 3 separate 1-week periods (June 29- July 5, July 22-August 10 and September 3-10). Among 34 condensate samples collected, 6 were tested as positive for SARS-CoV-2 antigens by ELISA, and none were positive for viral RNA by RT-LAMP or RT-PCR.

Moitra et al. (Oct 13, 2020). *Rapid and Low-Cost Sampling for Detection of Airborne SARS-CoV-2 in Dehumidifier Condensate*. Pre-print downloaded Oct 14 from <https://doi.org/10.1101/2020.10.08.20208785>

- [Preprint, not peer-reviewed] Increased food insecurity was found in Latinx communities in the San Francisco Bay Area during the COVID-19 pandemic. A series of phone interviews from three separate Latinx cohorts conducted from March to September 2020 in the San Francisco Bay Area (total 375 households, 1,875 individuals) found that only 47% of surveyed Latinx households report adequate food security. In the two cohorts with longitudinal data available prior to the pandemic, self-reported food insecurity was higher during the pandemic.

Escobar et al. (Oct 14, 2020). *High Food Insecurity in Latinx Families and Associated COVID-19 Infection in the Greater Bay Area California*. Pre-print downloaded Oct 14 from <https://doi.org/10.1101/2020.10.11.20210906>

Other Resources and Commentaries

- [Combining Rapid PCR and Antibody Tests Improved COVID-19 Diagnosis](#) – JAMA (Oct 13)
- [Network Graph Representation of COVID-19 Scientific Publications to Aid Knowledge Discovery](#) – MedRxiv (Oct 14)
- [Renin-Angiotensin-Aldosterone System Inhibitors and COVID-19 Infection or Hospitalization: A Cohort Study](#) – American Journal of Hypertension (Oct 13)
- [Analysis of SARS-CoV-2 Mutations in Mexico, Belize and Isolated Regions of Guatemala and Its Implication in the Diagnosis](#) – Journal of Medical Virology (Oct 13)
- [COVID-19 in New Zealand and the Impact of the National Response: A Descriptive Epidemiological Study](#) – The Lancet Public Health (Oct 14)
- [Associations between COVID-19 Misinformation Exposure and Belief with COVID-19 Knowledge and Preventive Behaviors: A Cross-Sectional Online Study](#) – Journal of Medical Internet Research (Oct 13)
- [Priorities for Addressing the Impact of the COVID-19 Pandemic on College Student Mental Health](#) – Journal of American College Health (Oct 13)
- [Myocardial Injury Associated with Coronavirus Disease 2019 in Pregnancy](#) – American Journal of Obstetrics and Gynecology (Oct 8)
- [Disparities in the Use of Video and Telephone Visits in Older Adults during the COVID-19 Pandemic: Cross-Sectional Analysis](#) – JMIR Aging (Oct 13)
- [The First 60 Days: American Public Health Agencies' Social Media Strategies in the Emerging COVID-19 Pandemic](#) – Health Security (Oct 9)
- [State-Level Variation of Initial COVID-19 Dynamics in the United States](#) – PLOS ONE (Oct 13)

- [The Twitter Social Mobility Index: Measuring Social Distancing Practices from Geolocated Tweets](#) – Journal of Medical Internet Research (Oct 13)

Report prepared by the UW Alliance for Pandemic Preparedness and Global Health Security and the START Center in collaboration with and on behalf of WA DOH COVID-19 Incident Management Team